








Childhood Obesity: Serious Consequences

Community Forums: Food,
Fitness and Our Kids

<<location>>

<<MM/DD/YY>>

Today's presentation will:

-  Demonstrate the extent of the problem
-  Explain how overweight/obesity occurs
-  Share the consequences of this epidemic:
 -  Health
 -  Economic
 -  Socioeconomic
-  Explain school's role in addressing this epidemic

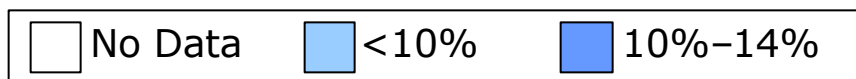
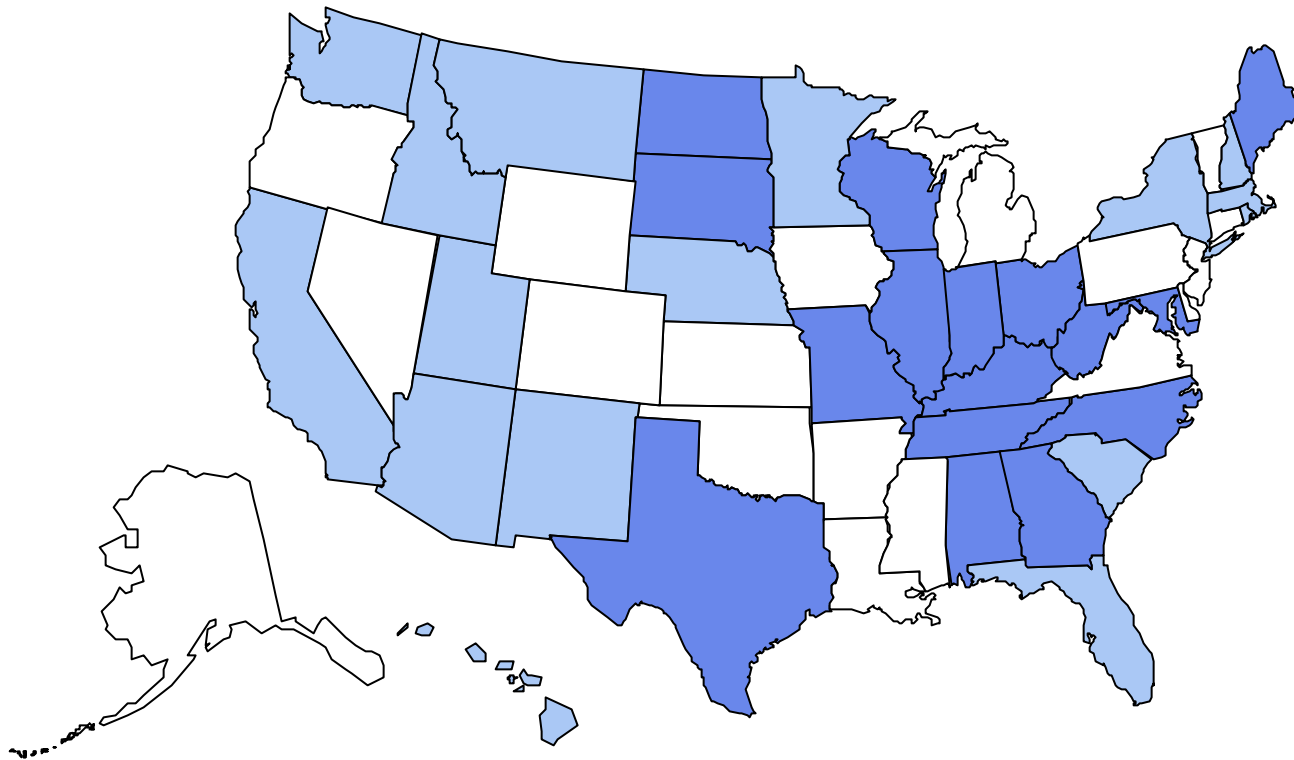
Key Definitions

- ✍ **BMI: Body Mass Index** is a calculation of height and weight.
 - ✍ A BMI of 19-24 is considered healthy weight, a BMI of 25-30 is considered overweight, and a BMI of 30 or greater is considered obese
- ✍ **Overweight:** For children or adolescents, overweight is defined as a BMI at or above the 95th percentile for children of the same age and gender.
- ✍ **Childhood obesity:** Used in population terms only, not used to describe an individual child. Childhood obesity refers to populations of children with a BMI at or above the 95th percentile.

Obesity Trends Among U.S. Adults

BRFSS, 1987

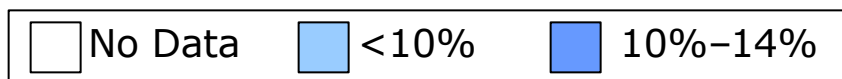
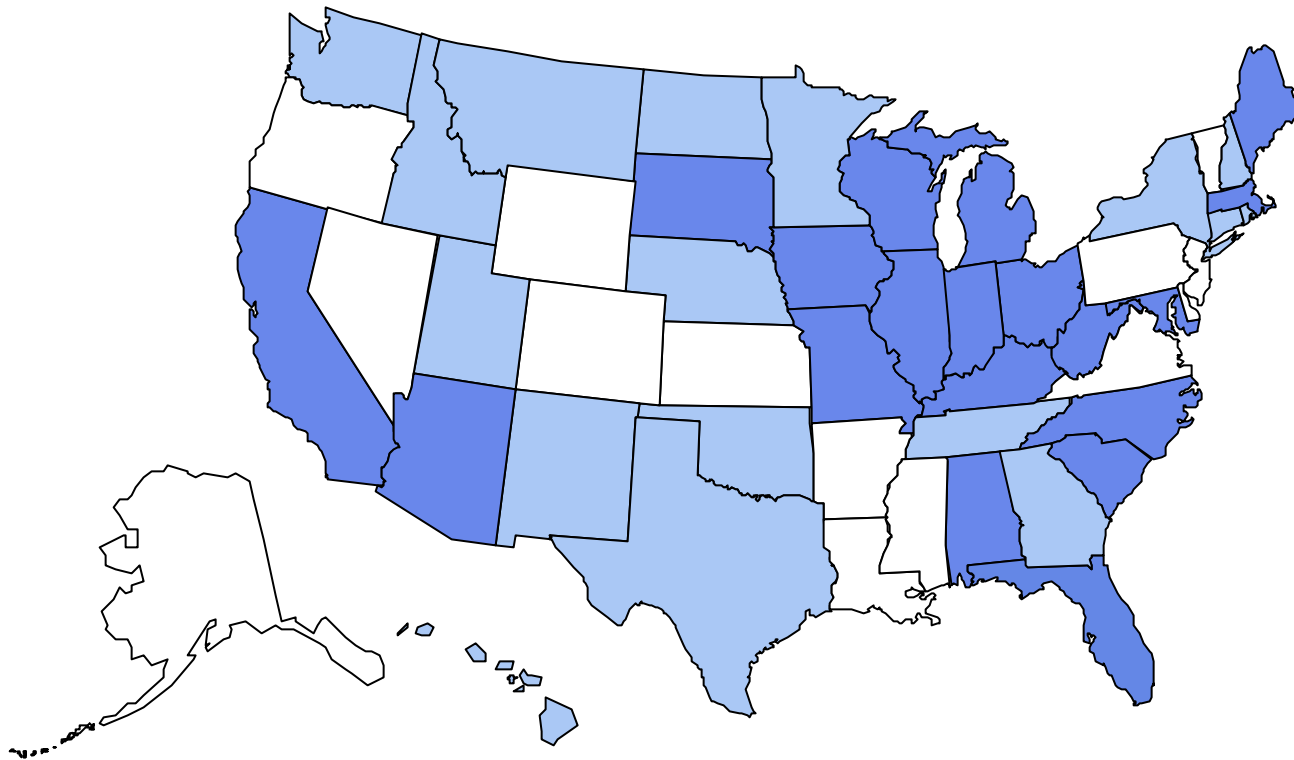
(*BMI =30, or ~ 30 lbs overweight for 5' 4" woman)



Obesity Trends Among U.S. Adults

BRFSS, 1988

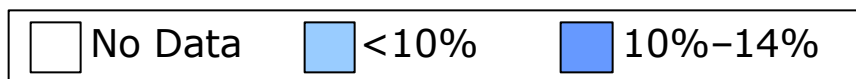
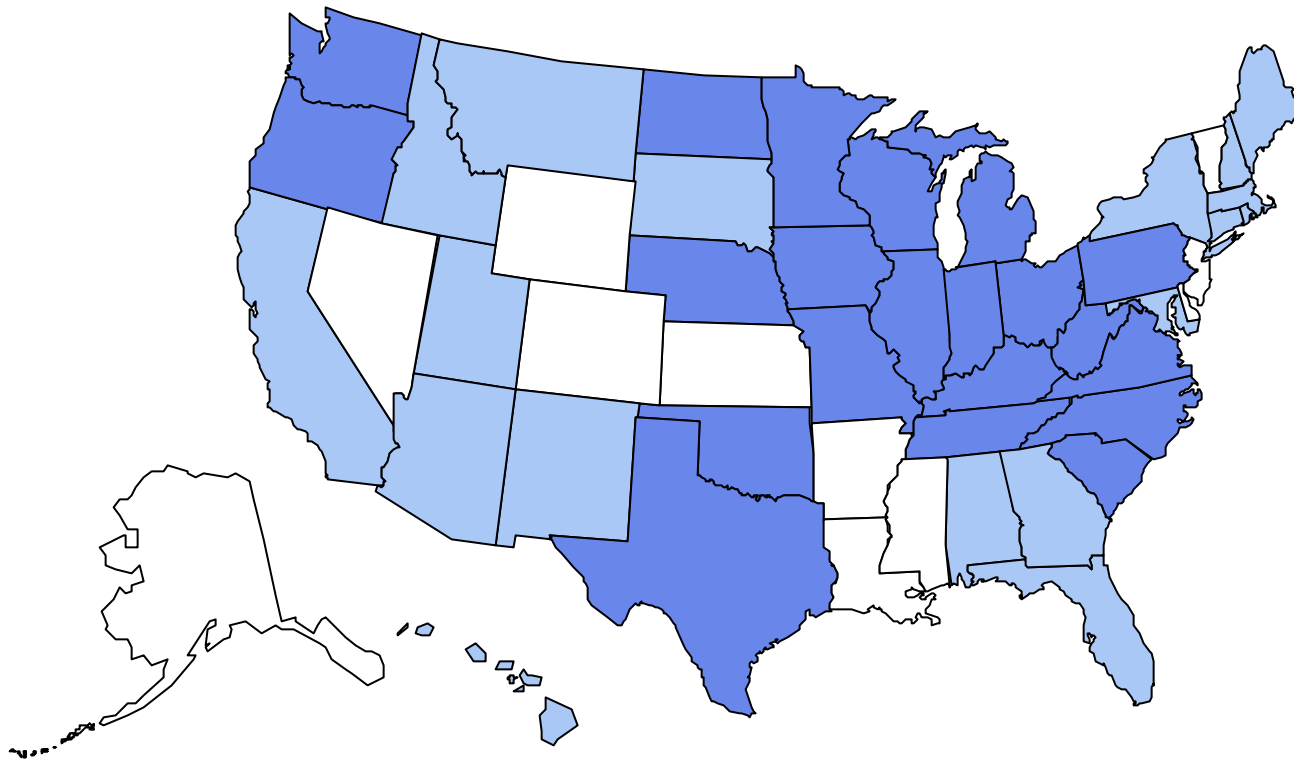
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Obesity Trends Among U.S. Adults

BRFSS, 1989

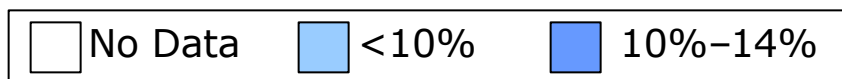
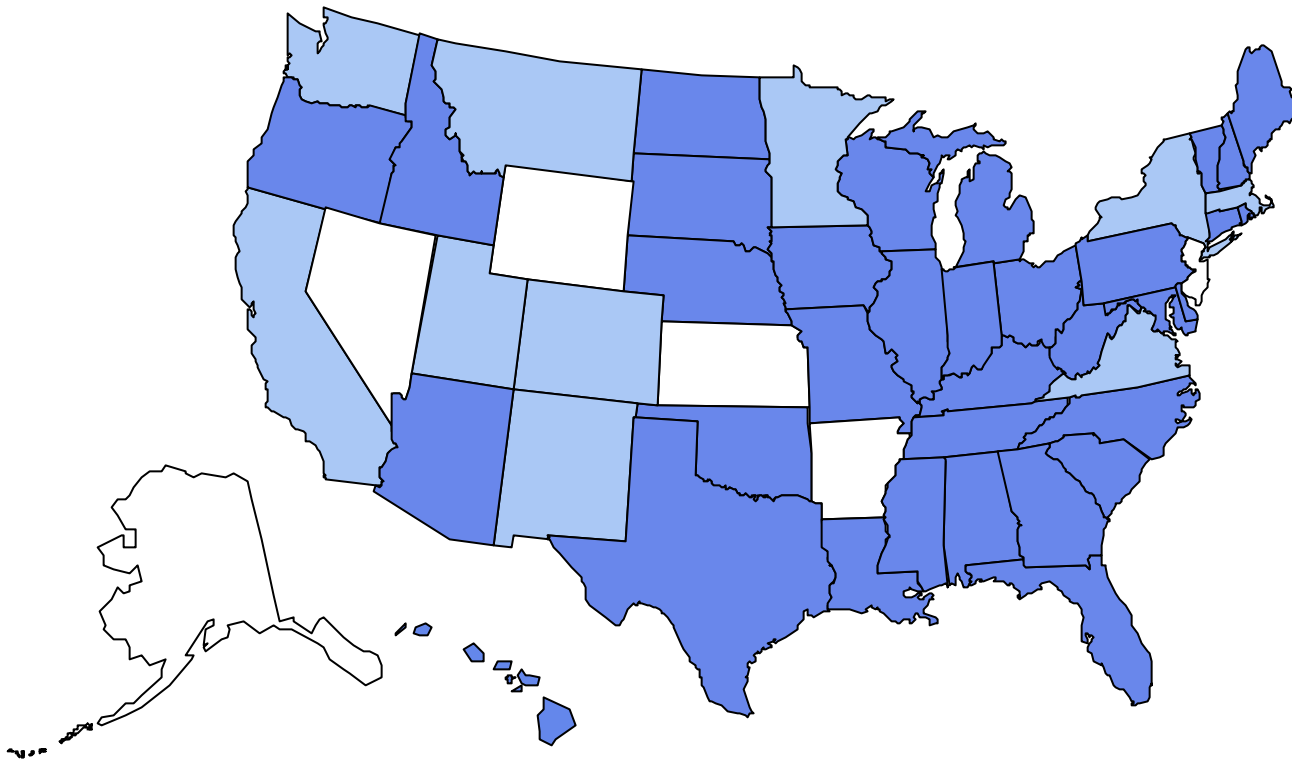
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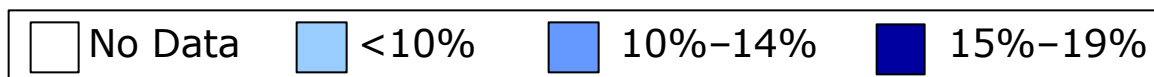
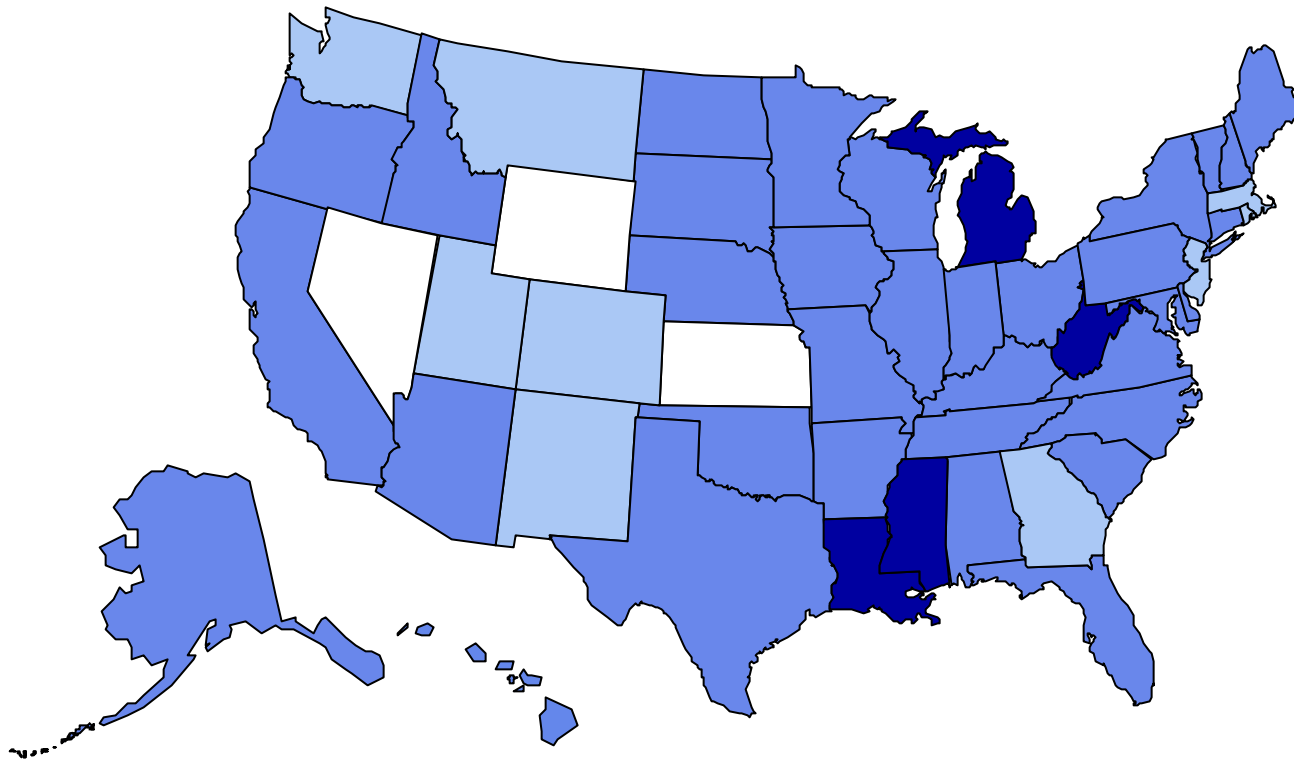
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Obesity Trends Among U.S. Adults

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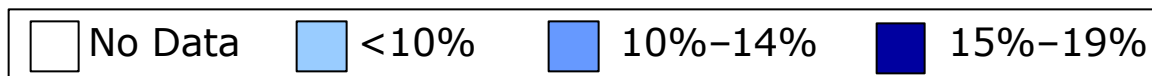
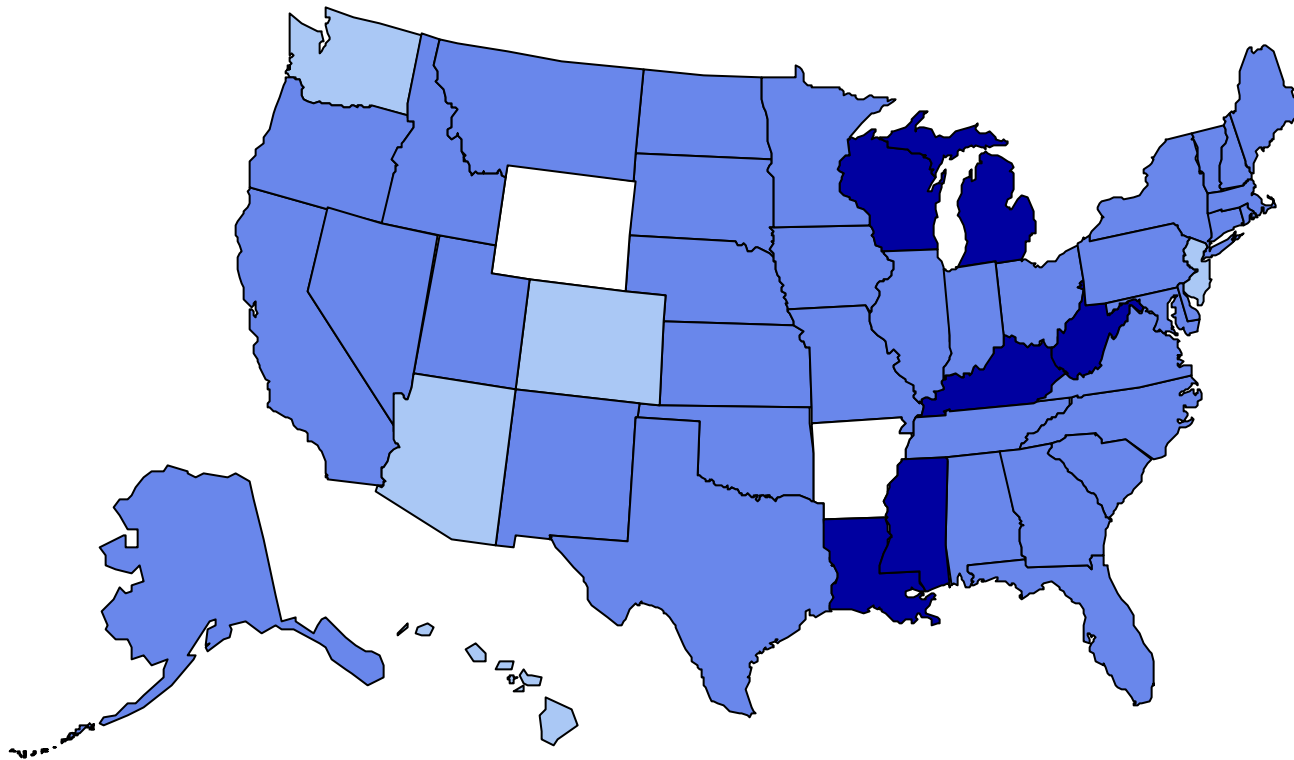
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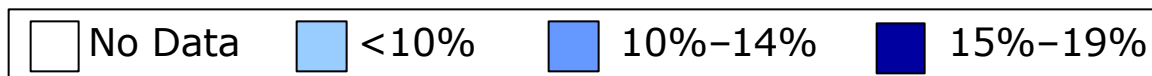
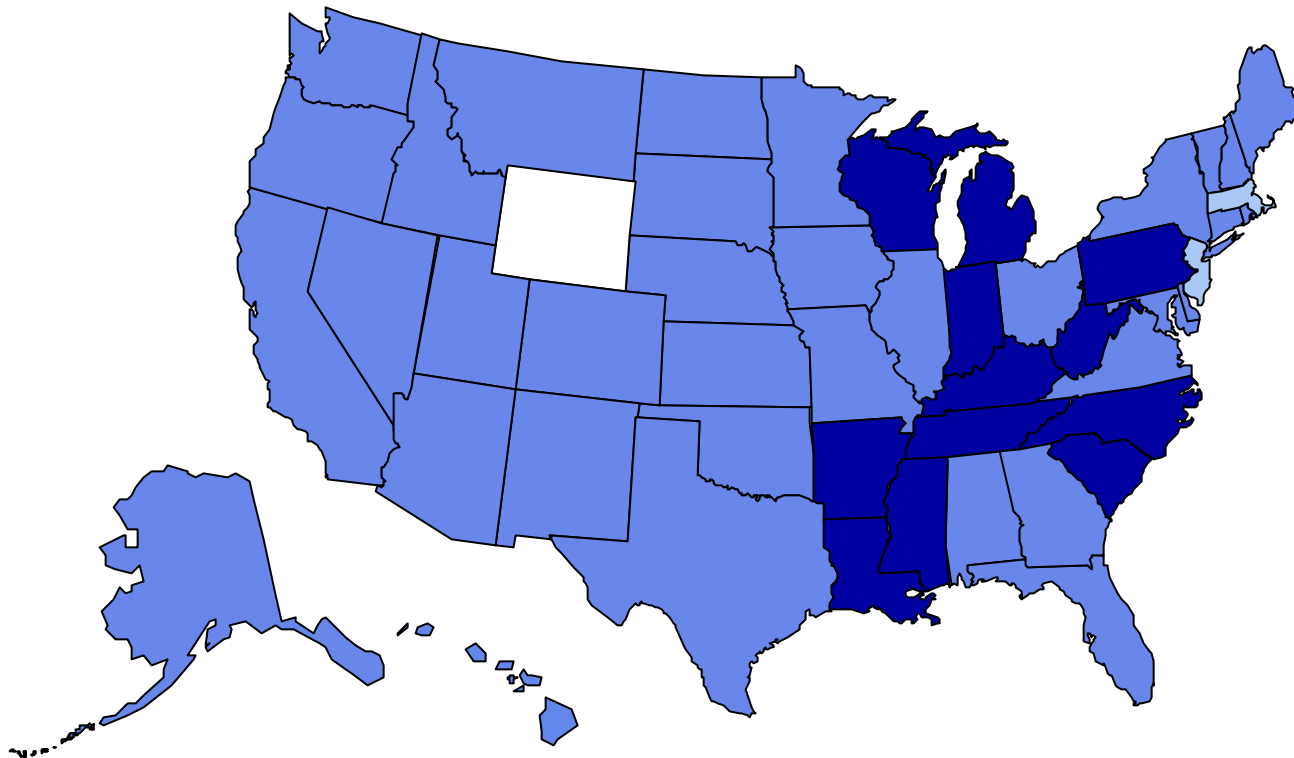
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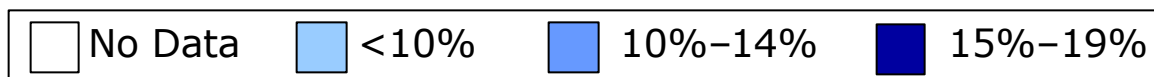
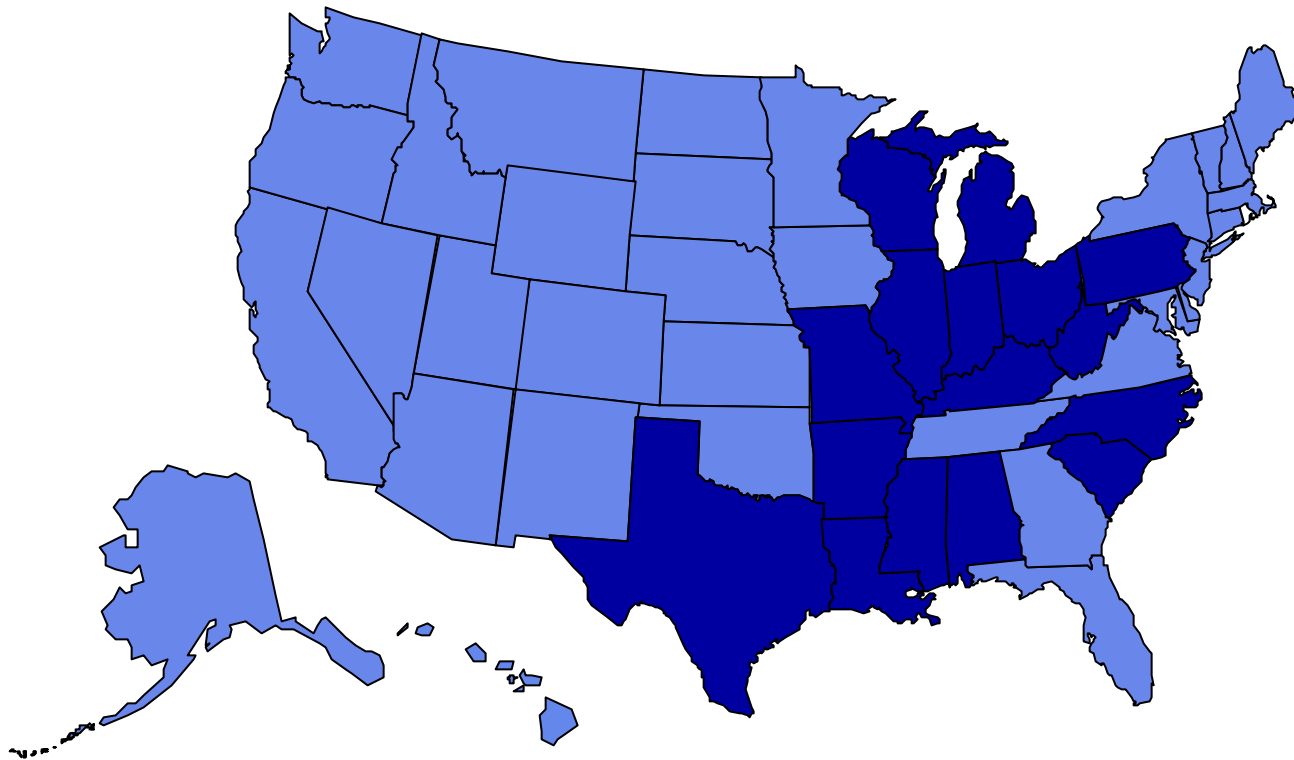
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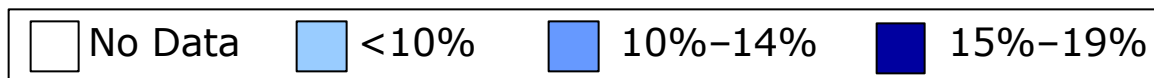
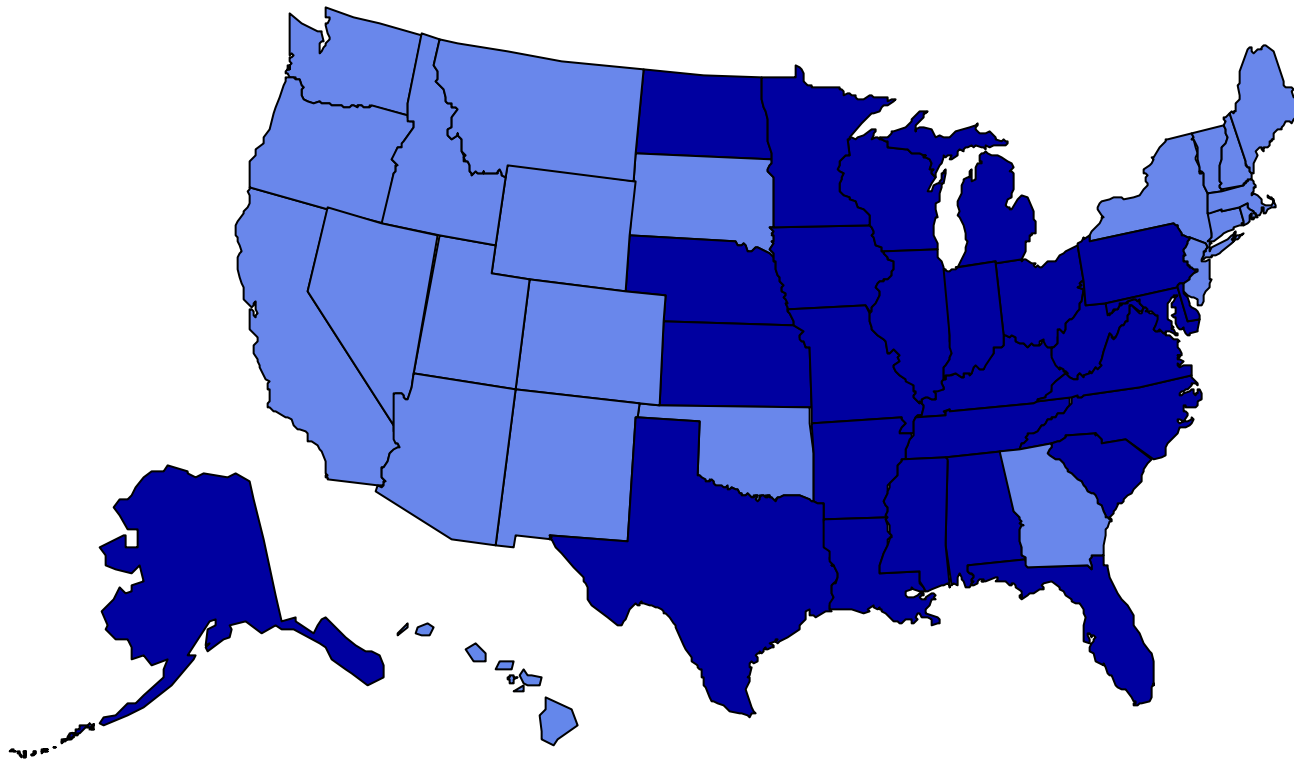
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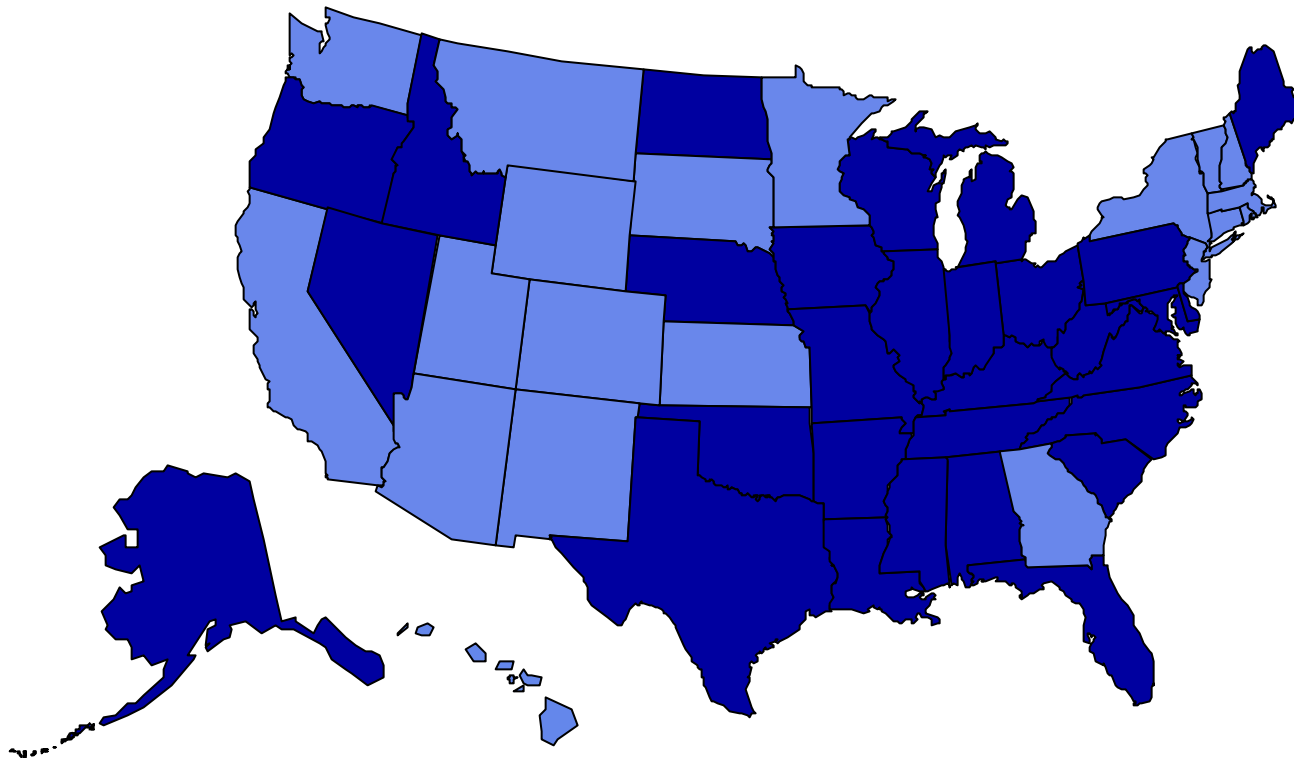
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BRFSS, 1996

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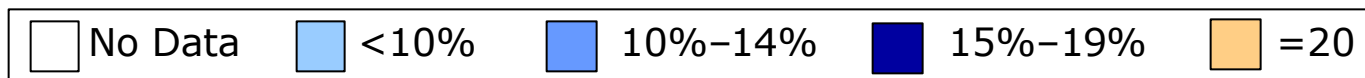
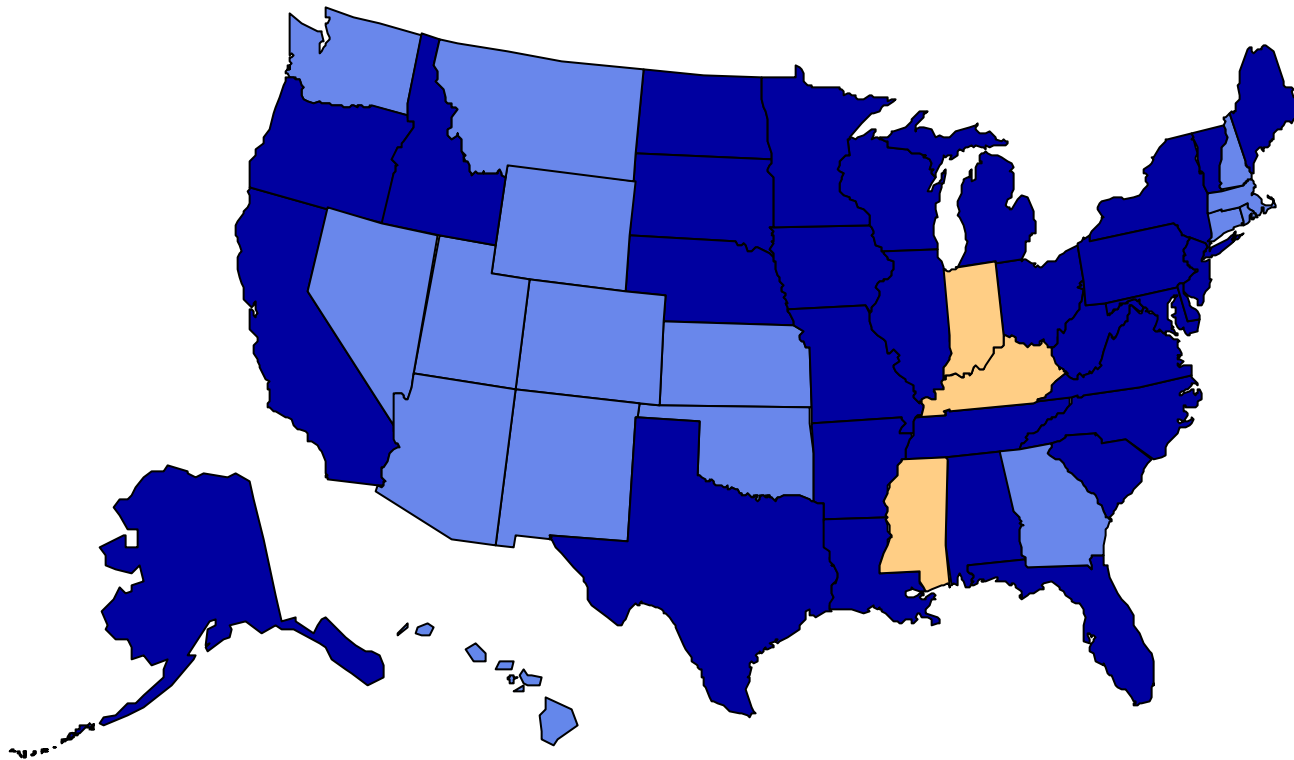


☐ No Data ☐ <10% ☐ 10%-14% ☐ 15%-19%

Obesity Trends Among U.S. Adults

BRFSS, 1997

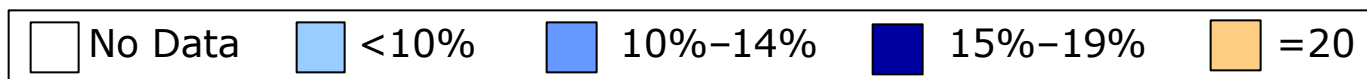
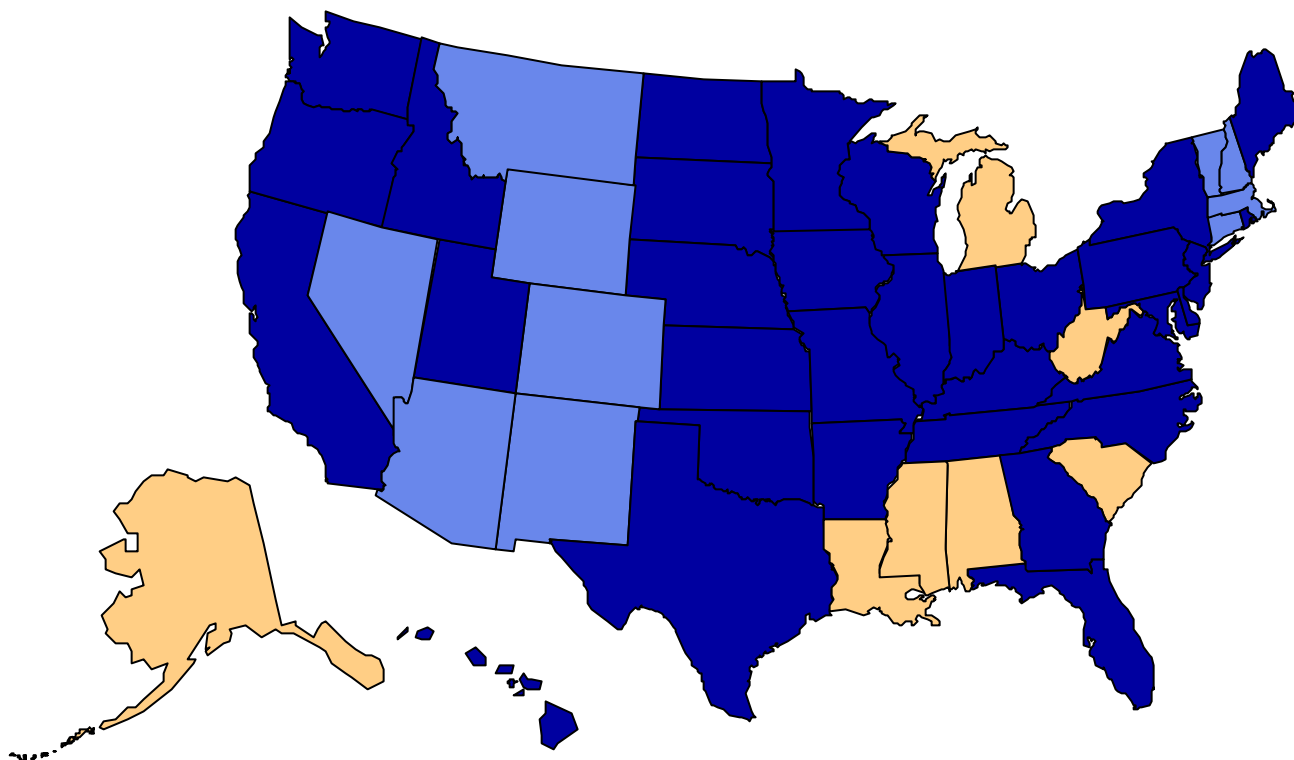
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Obesity Trends Among U.S. Adults

BRFSS, 1998

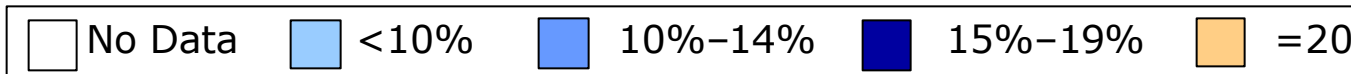
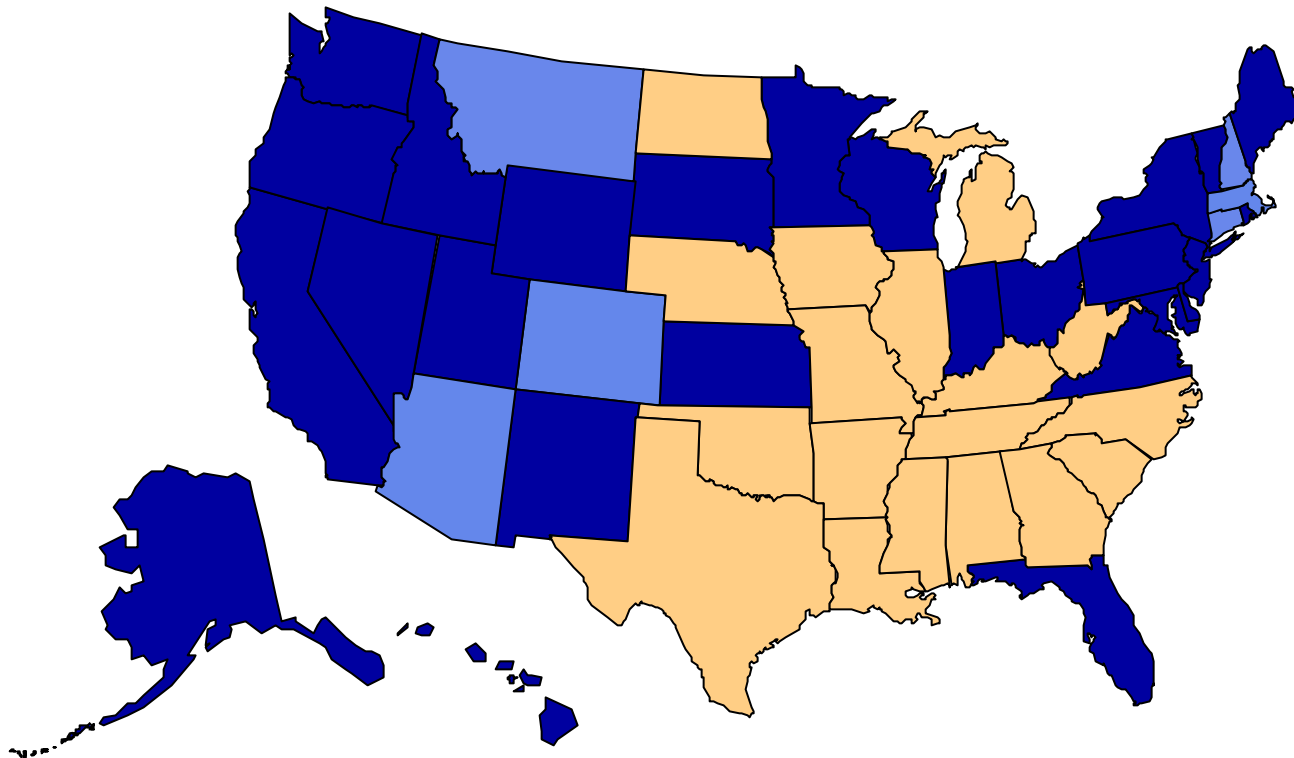
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Obesity Trends Among U.S. Adults

BRFSS, 1999

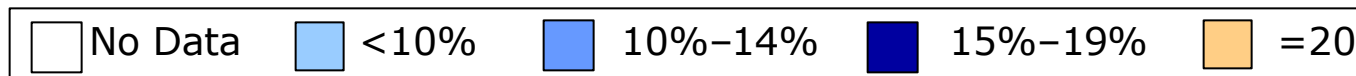
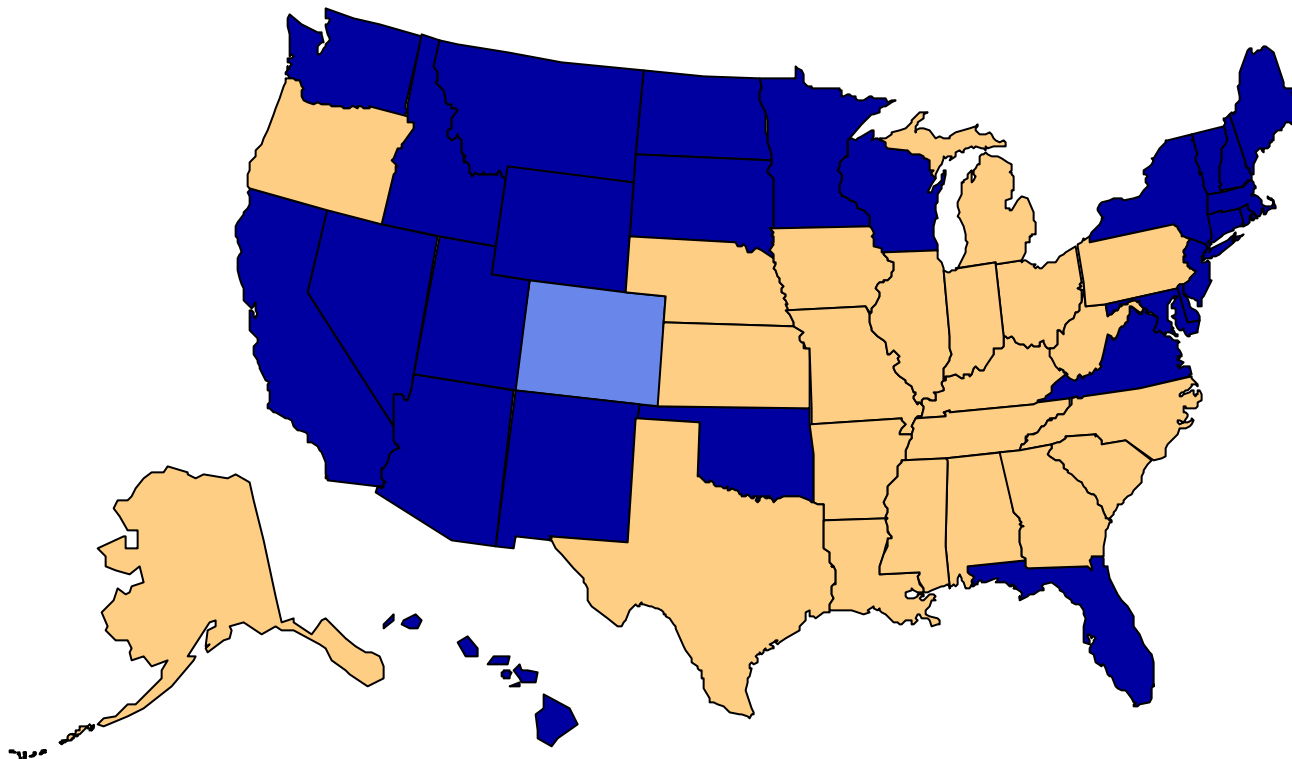
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Obesity Trends Among U.S. Adults

BRFSS, 2000

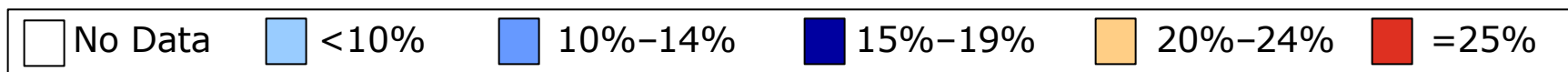
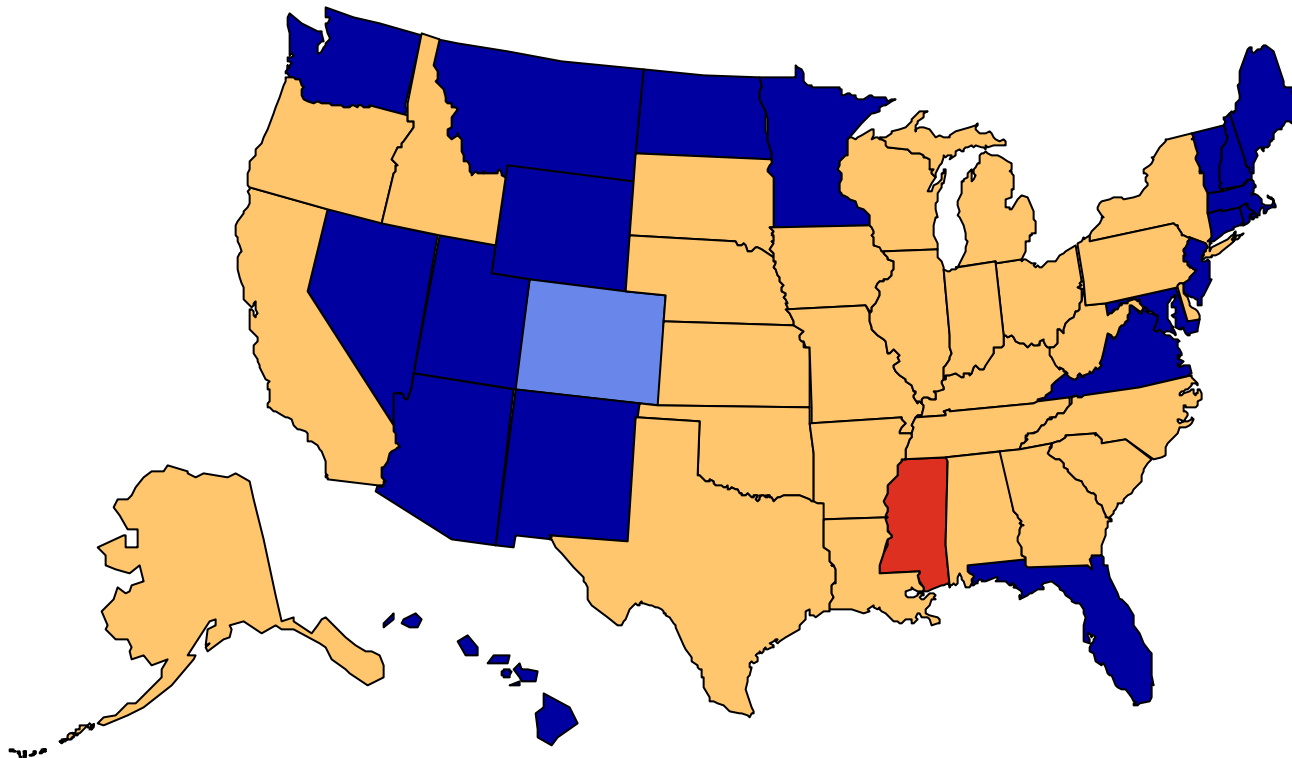
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Obesity Trends Among U.S. Adults

BRFSS, 2001

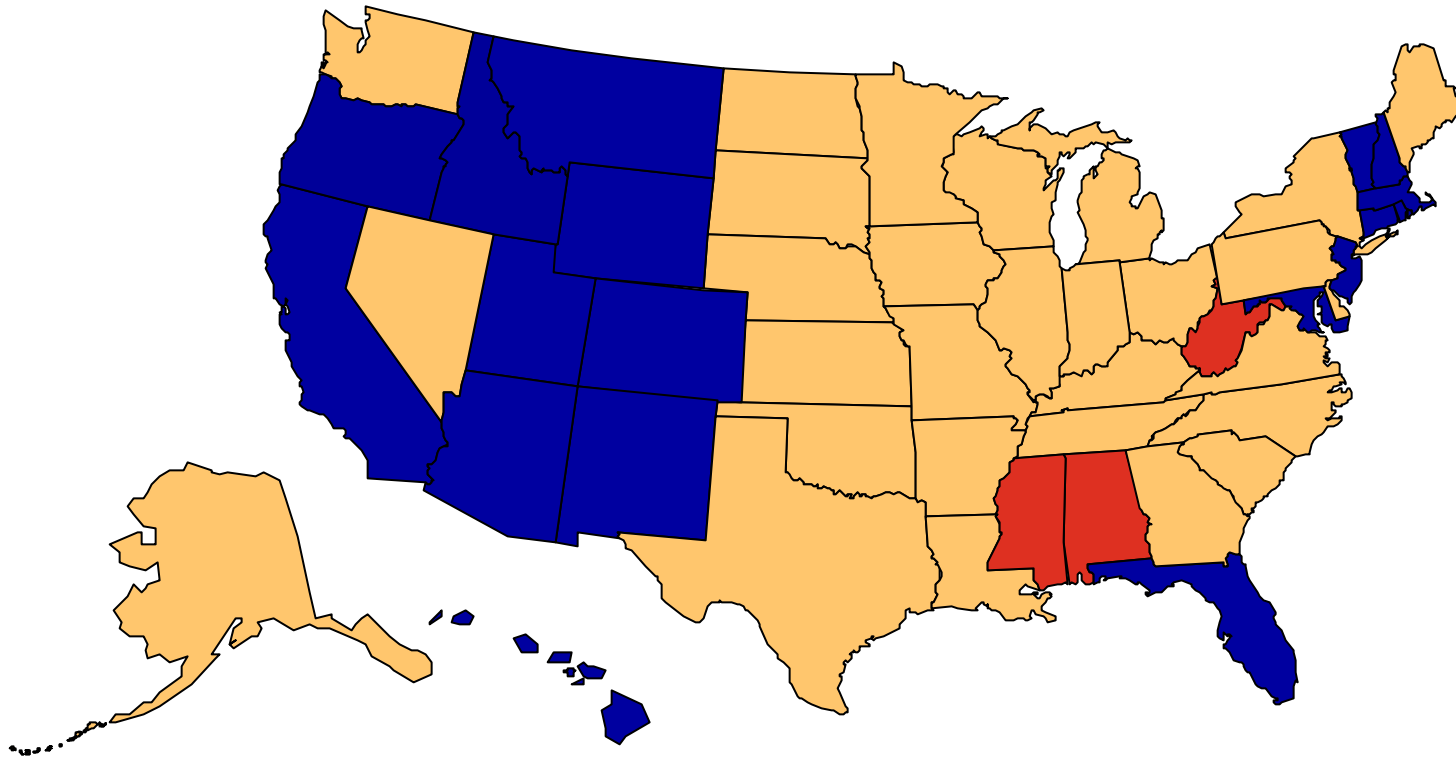
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Obesity Trends Among U.S. Adults

BRFSS, 2002

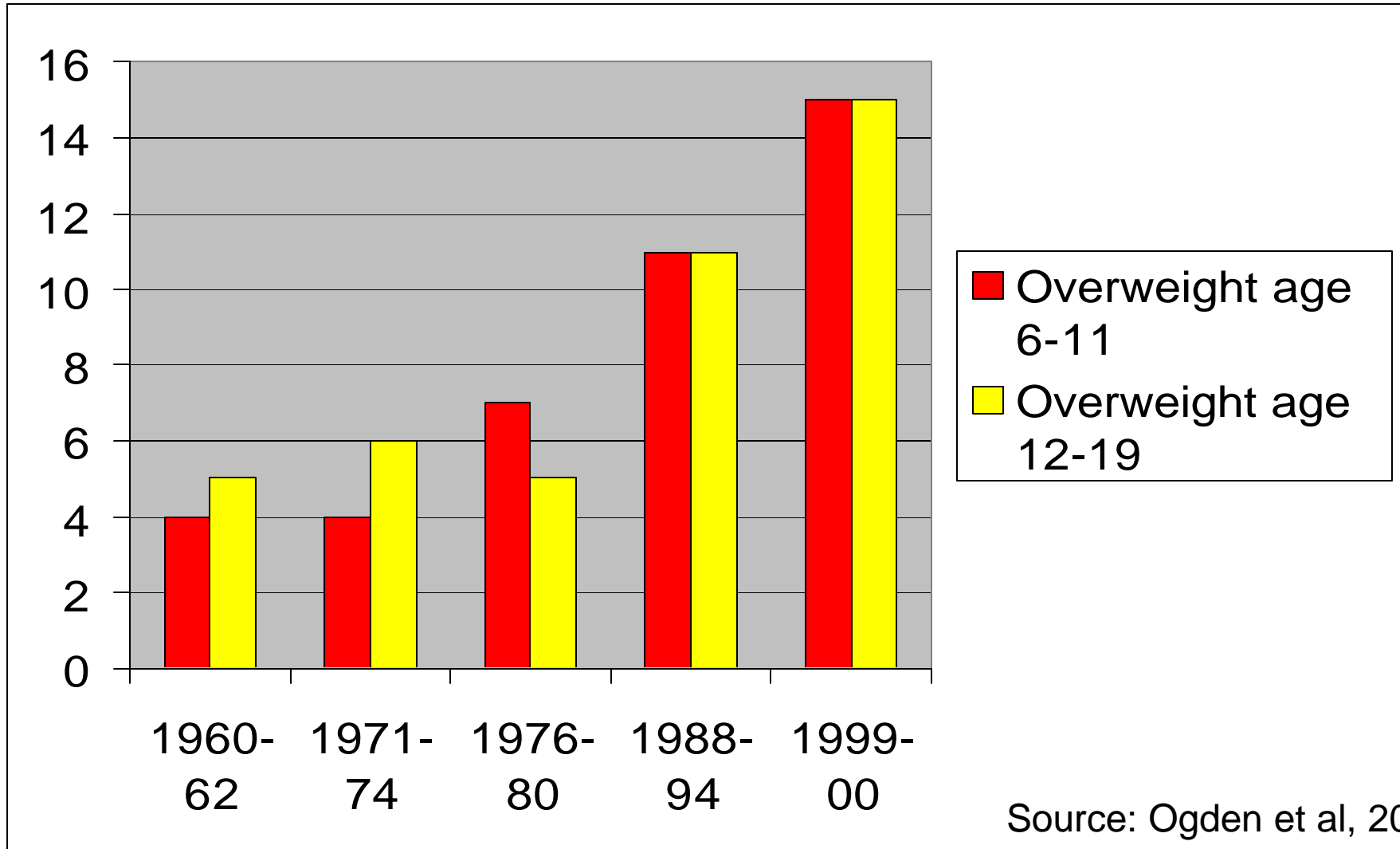
(*BMI =30, or ~ 30 lbs overweight for 5' 4" woman)



Source: Behavioral Risk Factor Surveillance System, CDC

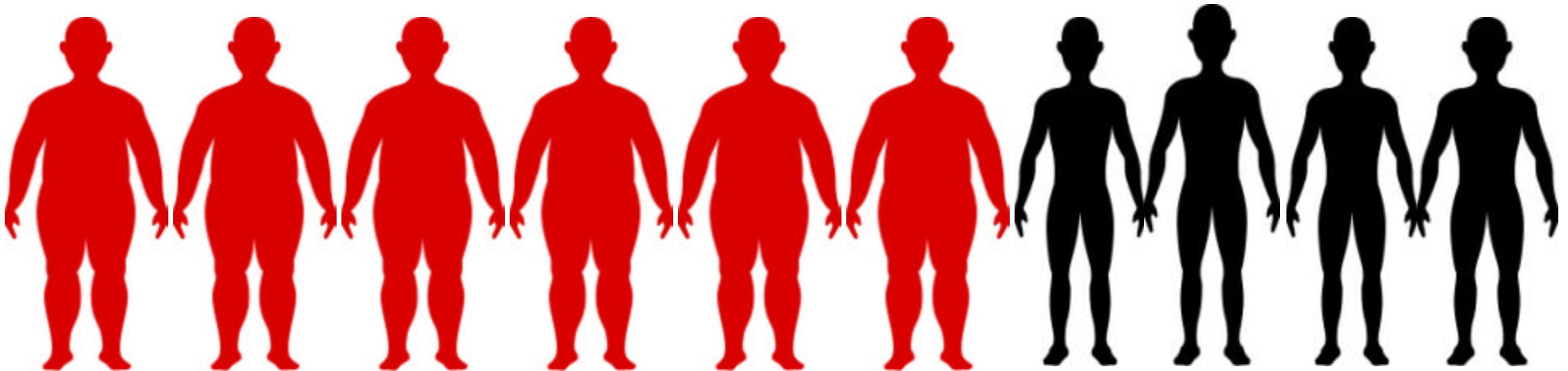
Percent of overweight children in US

(Overweight: BMI > sex- & age-specific 95% cutoff)



Washington State data

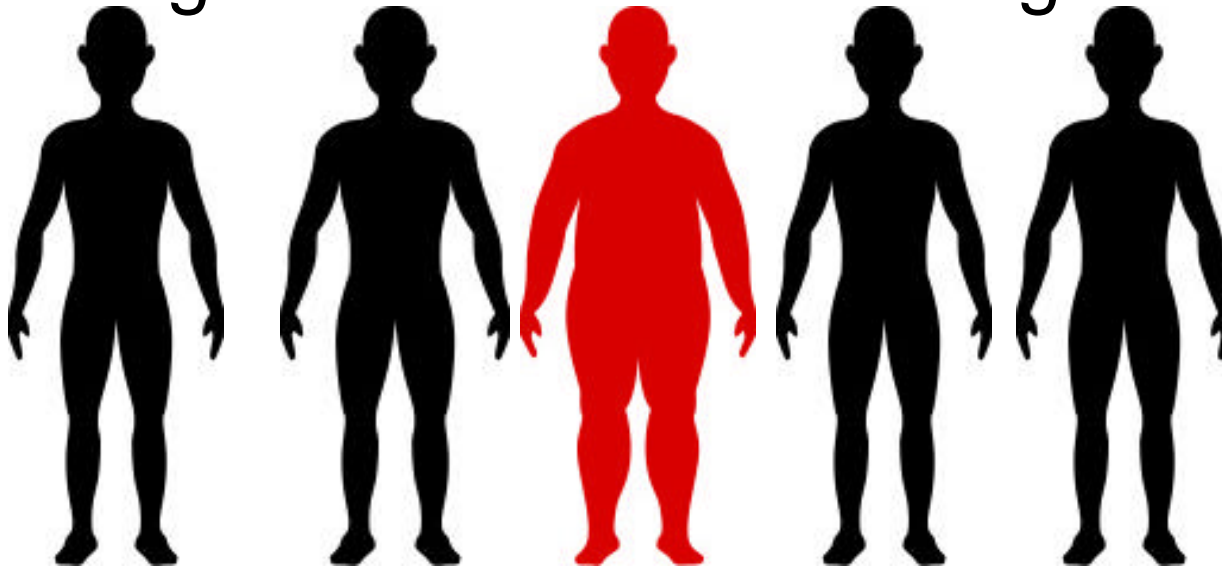
 6 of 10 of adults are overweight or obese



Source: CDC BRFFS, 2002

Washington State data

✍ Over 24.1% of high school students are overweight or at risk of becoming overweight



✍ 8 out of 10 overweight children will become obese adults

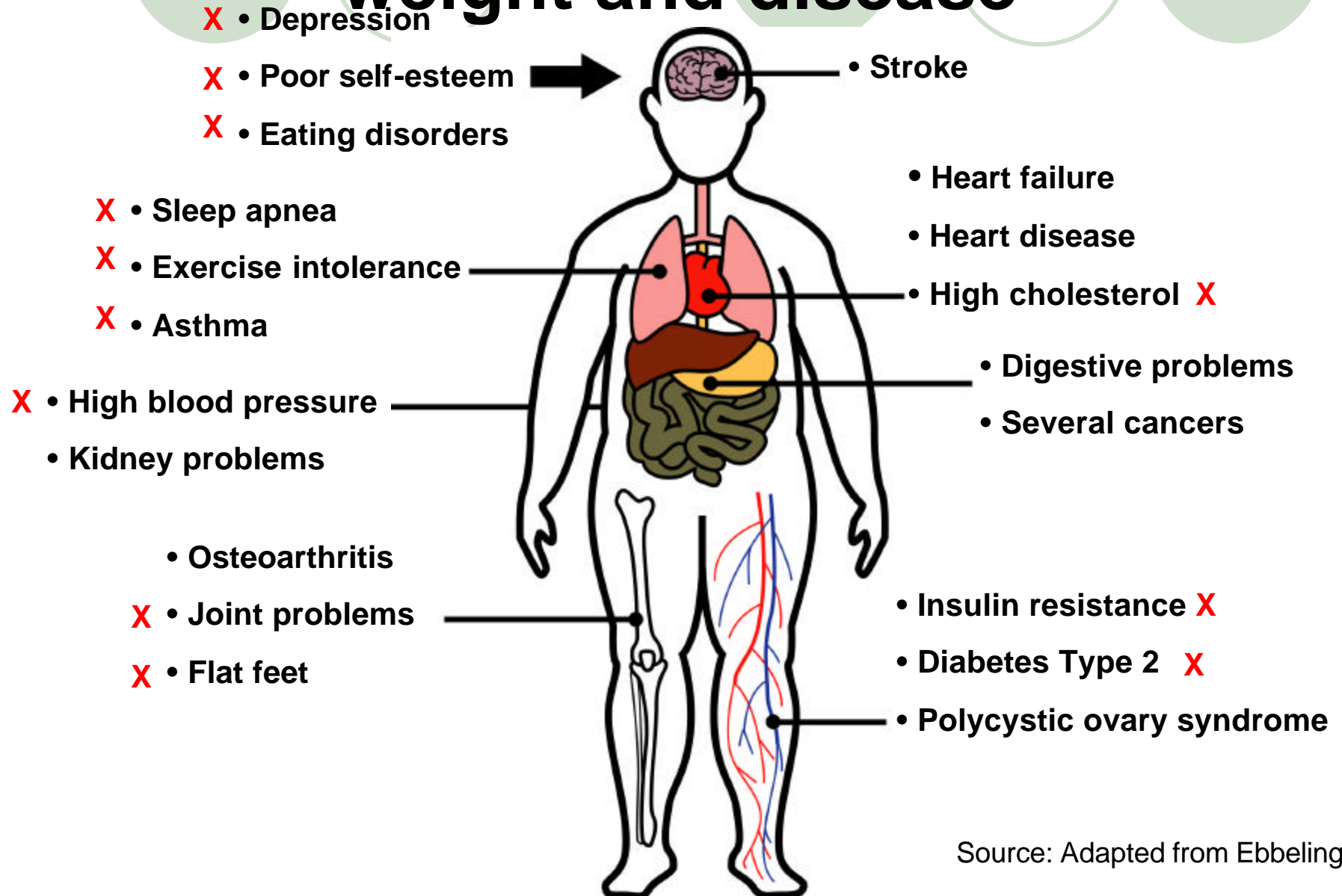
✍ The severity of the obesity is more extreme

Why does overweight and obesity matter?

It's more than vanity





Associations between excess weight and disease



Source: Adapted from Ebbeling 02

Why it matters: lifelong effects

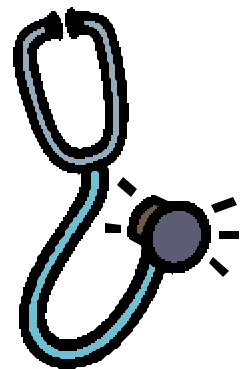
 Overweight kids are at increased risk of premature death caused by heart disease as an adult

 60% of overweight children and adolescents have already developed a risk factor for cardiovascular disease, including:

 High blood pressure

 High cholesterol

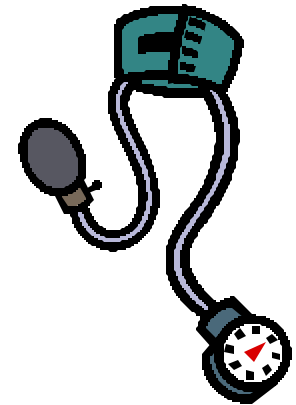
 Insulin resistance: “pre-diabetes”



Why it matters: lifetime effects


✍ It is reasonable to expect that once adults, these kids will have a higher risk for & earlier onset of the diseases associated with overweight, particularly:

- ✍ Heart disease
- ✍ Type 2 diabetes
- ✍ Kidney disease



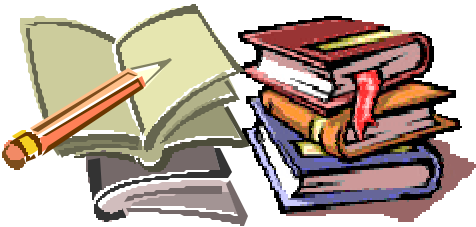
The good news...

 Overweight children don't have to grow up to be obese, sick adults:

 When rapid weight gain is stopped in childhood, disease risk is greatly reduced

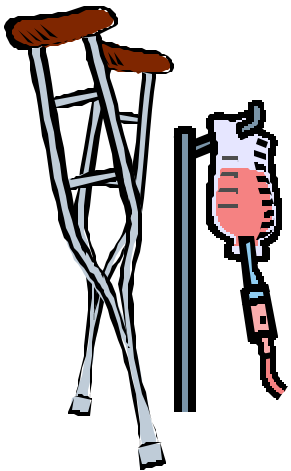
Why it matters: Academics

- ✍ Overweight children have significantly lower math and reading test scores compared to non-overweight children in kindergarten (confounded by SES)
- ✍ Children who are gaining weight rapidly have increased behavioral and learning difficulties



Why it matters: Societal Burden

✍ Not only will these disease processes in childhood result in greater harm to the individual, it will add a considerable burden and cost to our society



Source: Dietz, NEJM 2004

US Economic Cost

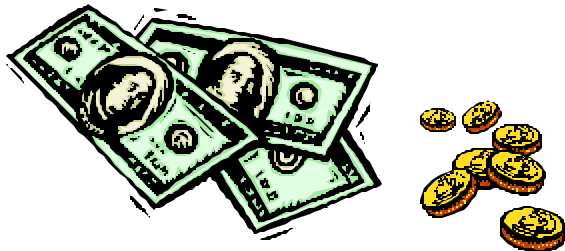
✍ Estimated cost of overweight and obesity in 1998 is estimated to have been over \$78 billion, nearly 10% of the US health expenditure.

✍ Over \$125 million is spent annually on hospital admittance caused by complications of childhood obesity



Washington's Economic Cost


✍ Annual estimate of medical expenditures attributable to obesity for Washington State alone: Over \$1.3 billion dollars




Why it matters: Self-Image

 Overweight young children (5 years old):

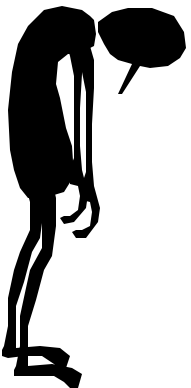
 Develop a negative self-image

 Perceive themselves to have a lower cognitive ability

 Overweight adolescents:

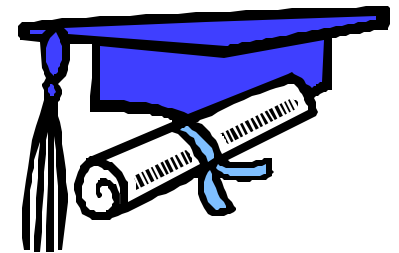
 Have a lower self-esteem associated with sadness, loneliness, and nervousness

 Are likely to participate in high risk behaviors



Why it matters: Socioeconomics

- ✍ Once adults, overweight female adolescents compared to those of healthy weights, have been shown to:
 - ✍ Complete fewer years of schooling
 - ✍ Have substantially lower household incomes
 - ✍ Higher rates of poverty



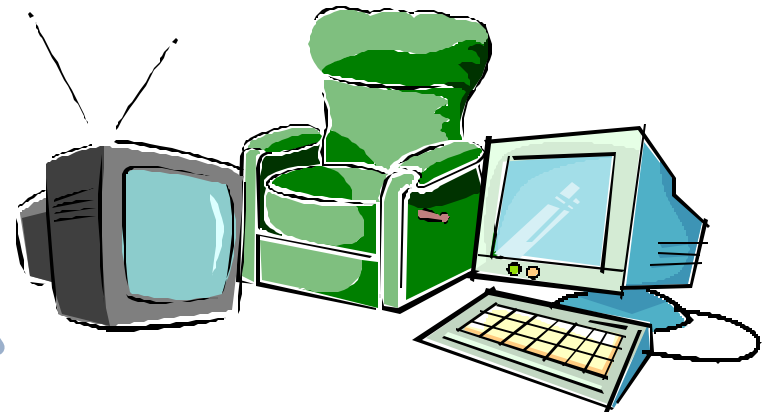
Source: Gortmaker et al '93

How did this happen?

Weight gain:

Energy Out

Energy In



How did this happen?


Nature

vs.


Nuture

How did this happen?




Is it **genetics**?

 The rates of overweight and obesity have increased in our adult and child populations at such a high rate in such a short time... Our gene pool hasn't evolved that fast.

Did something change in our **environment**?

 It is plausible that something has changed in our environment that has made it easier for the population as a whole to gain weight.

How did this happen?

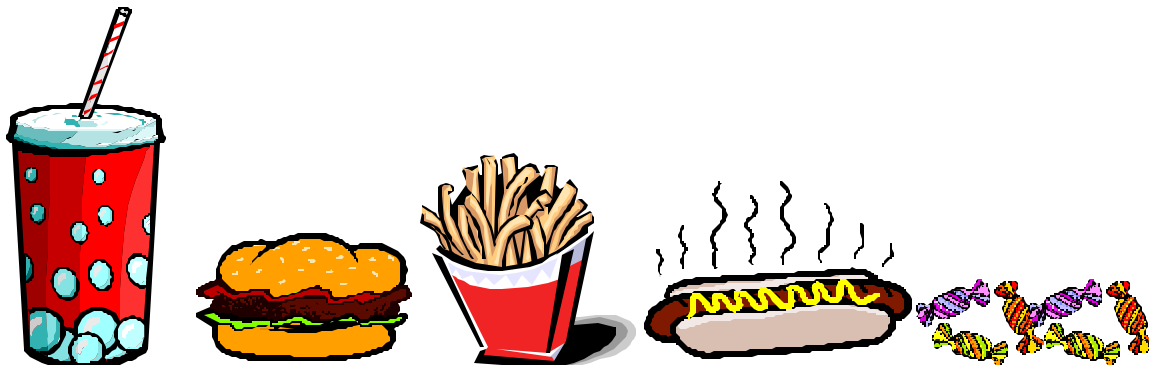
-  This is a complex issue
-  Likely there is no one cause, but a combined effect of many
-  Some things may have changed in our environment that have allowed those who are more genetically susceptible to weight gain to do so

What has changed in our environment?

- ✍ The environment that we live in has changed in ways that have made it easier for us to eat more calories and expend less energy
 - ✍ Increased time spent on sedentary activities: TV, computer, video games, driving
 - ✍ Less time spent doing physically active things: e.g.- we work at desks instead of manual labor, we drive instead of walk, bike or run.
 - ✍ Portion sizes have increased
 - ✍ Consumption of sugar and soft drinks has increased
 - ✍ Increased availability and affordability of high calorie foods

What are kids eating?

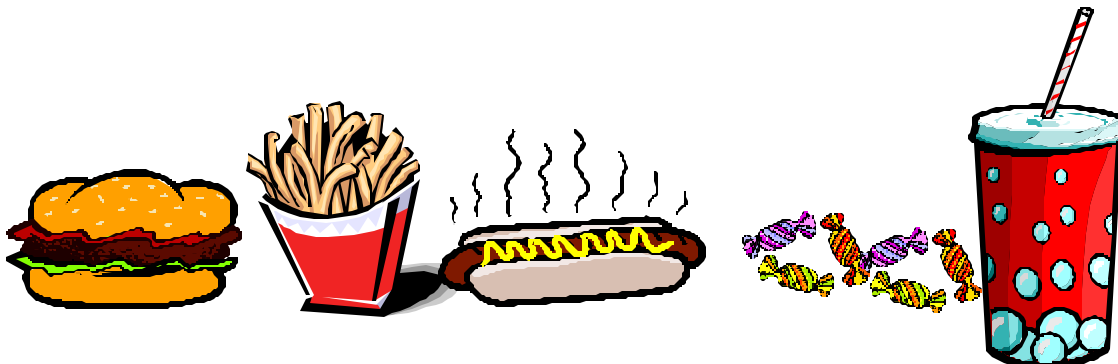
- ✍ 1 in 4 adolescents drink more than 325 calories of soda per day
 - ✍ Soda is the leading source of added sugar in the American adolescent diet
- ✍ Added sugars contribute 20% of the calories consumed by children



Source: Wiehe 04; FNS report to congress 01; CDC YRBS '01

What are kids eating?

- ✍ Each day, over 30% of children and adolescents eat fast food
- ✍ On days that children eat fast food, they consume substantially more calories and have a worse diet quality compared to days when they do not eat fast food.



Source: Bowman et al 04; FNS 01;
CDC YRBS '01

What are kids eating?

- ✍ 2% of kids meet the Food Guide Pyramids recommendations for all 5 food groups
- ✍ Only 20% of kids eat the recommended 5 servings (minimum) of fruits and vegetables per day

What are kids eating?




- ✍ When schools provide access to soft drinks and snack foods students are less likely to consume fruits, juice, milk and vegetables than schools who do not provide such access.

What is the obesity solution?

Prevention!

 **Establish policies and environments that promote healthy eating and physical activity throughout our communities**

The Schools' Role

-  Assessing the environment and making changes
-  School policies can help to prevent childhood obesity by supporting opportunities for healthy meals, physical activity and health education.
-  Healthy habits are learned young - begin reinforcing them in school!